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**(Report to Congress
on Universal Service)**

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Thanks .

**Federal Communications Commission
Washington, DC 20554**

**Report to Congress on Universal Service
En Banc**

**Thursday, February 19, 1998, 2:00 - 4:00 p.m.
Room 856, 1919 M Street, N.W.**

AGENDA

- I. Commissioner's Introductory Remarks**
- II. Internet Service Provider & Internet Telephony Overview**

Thomas E. Hyland
Partner
Coopers & Lybrand L.L.P.

Jeff Pulver
President
Pulver.com

III. Presentations

Earl Comstock
Attorney
Sher & Blackwell

Esther Dyson
President
EDventure Holdings

Jill A. Lesser
Deputy Director, Law and Public Policy and Senior Counsel
America Online, Inc.

David Hostetter
District Manager-Access Policy
SBC Communications Inc.

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**FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY**

Ian Dix
Vice President, Large Account Marketing
LCI, International

Tom Evslin
Chairman/CEO
ITXC Corporation

Howard J. Symons
Partner
Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.
(Representing National Cable Television Association)

John James
Principal/Superintendent
Central Catholic High School
West Point, Nebraska

IV. Q & A by Commissioners

Thomas E. Hyland
Partner & Co-Chair, Media & Entertainment Group
Coopers & Lybrand L.L.P.

Thomas E. Hyland (Tom), is a partner in the professional services firm of Cooper & Lybrand L.L.P. Tom has been with the Firm for over thirty years and is the Co-Chair of the Firm's Media & Entertainment Group and Chair of their New Media Group.

Tom founded the New Media Group which provides a comprehensive set of service offerings including business assurance, tax advisory, management consulting, financial advisory and human resource advisory services. Tom is very active in the New Media field and has authored numerous articles and lead research studies on the growth and development of New Media such as the Internet Advertising Revenue Survey and the Growth and Development of New Media in New York.

Tom's career spans four decades and includes client service to leading global companies in various segments of the Media & Entertainment Industry including broadcasting, publishing, new media, advertising, cable, music and sports.



***Presentation To Federal
Communications Commission***

***Internet Service Provider Overview
Coopers & Lybrand's New Media Group***

**Tom Hyland
Chair - New Media Group
February 19, 1998**

Coopers & Lybrand L.L.P.
a professional services firm

The New Media Group

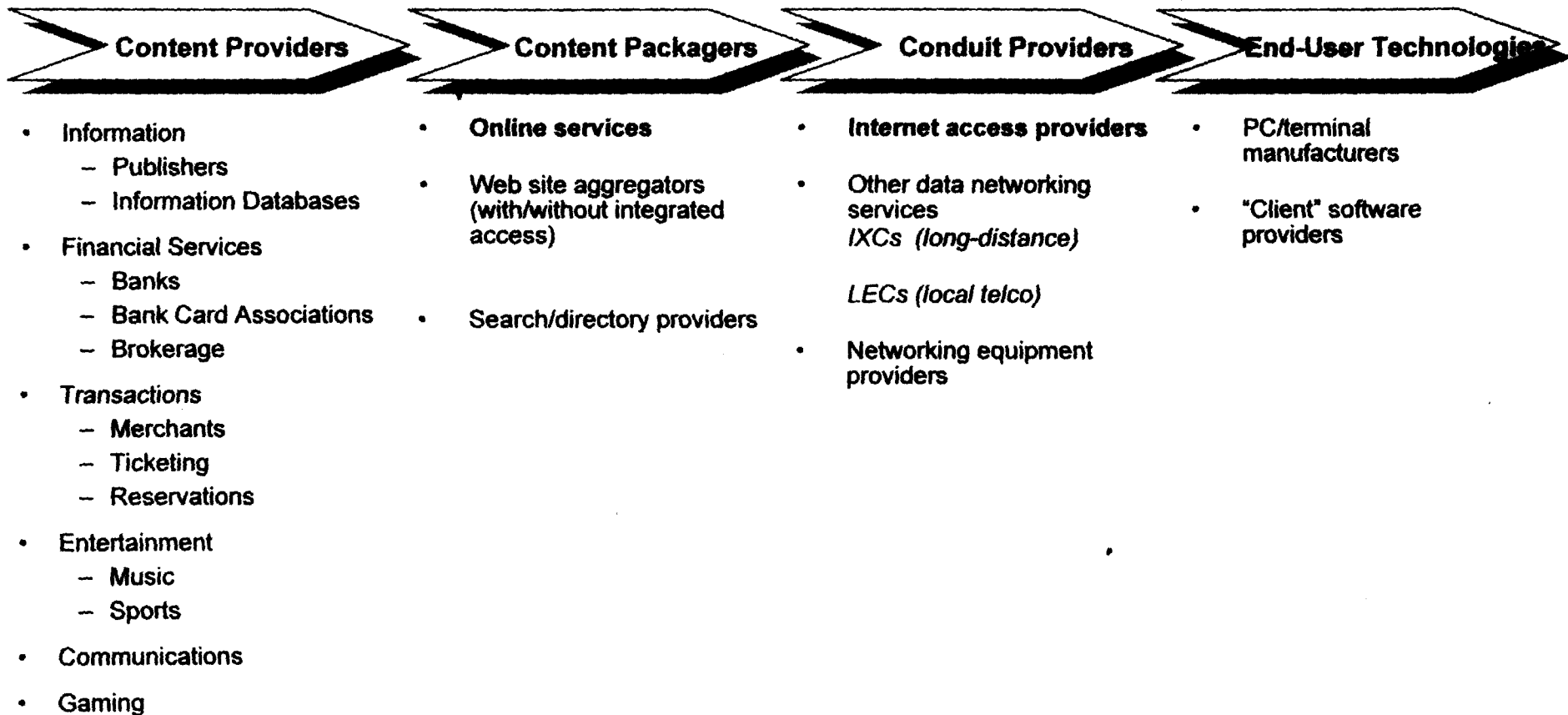
Agenda

- ***Internet service provider (ISP) market overview***
 - ***Media value chains***
 - ***Types of ISPs***
 - ***Value drivers***
- ***ISP financial model (by segment)***
 - ***Revenues***
 - ***Cost structure***
- ***Market trends***
 - ***revenue projections***

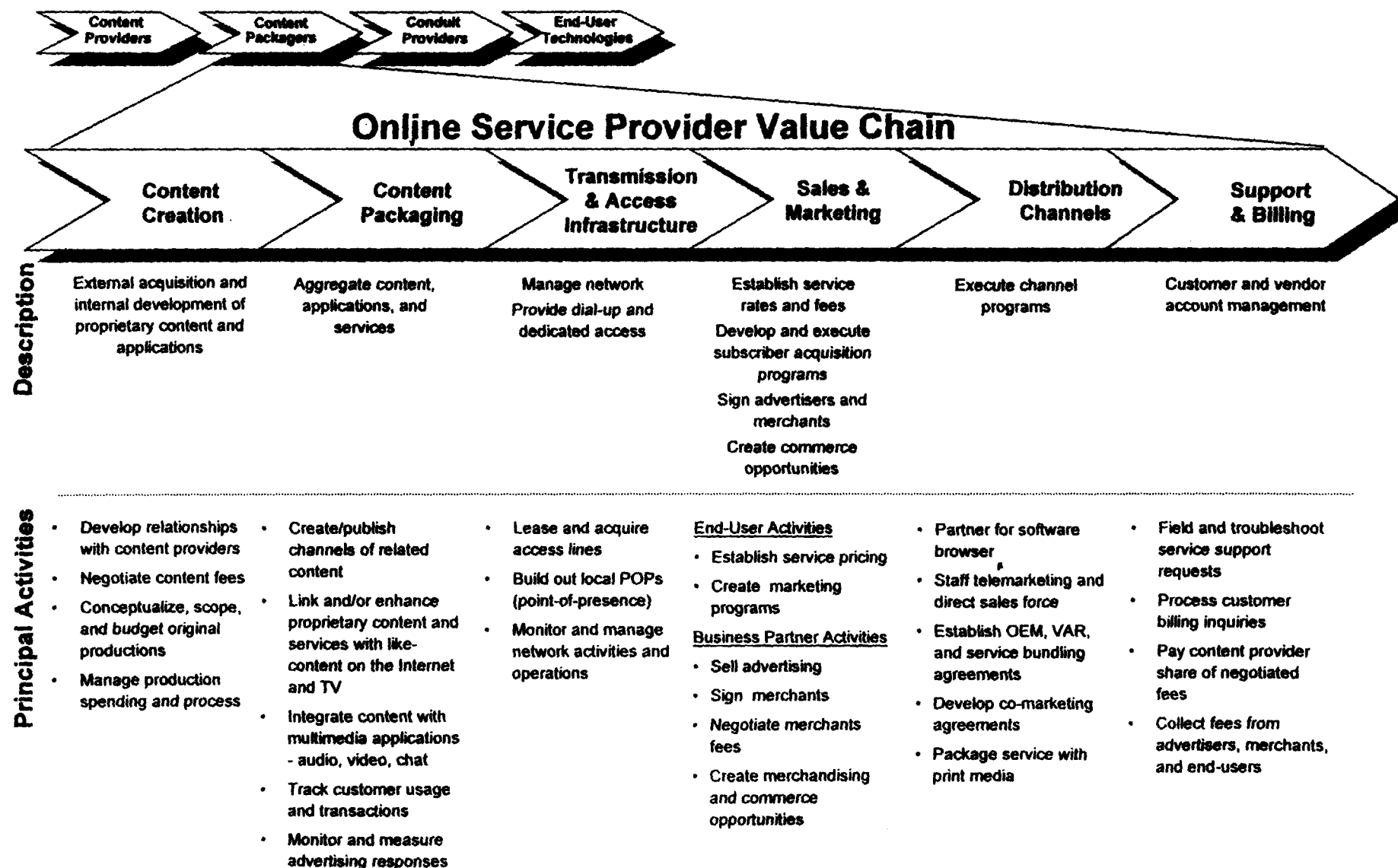
Market overview

Online service operators and ISPs perform aggregation and connectivity functions that link end-users with information providers in the media industry supply chain

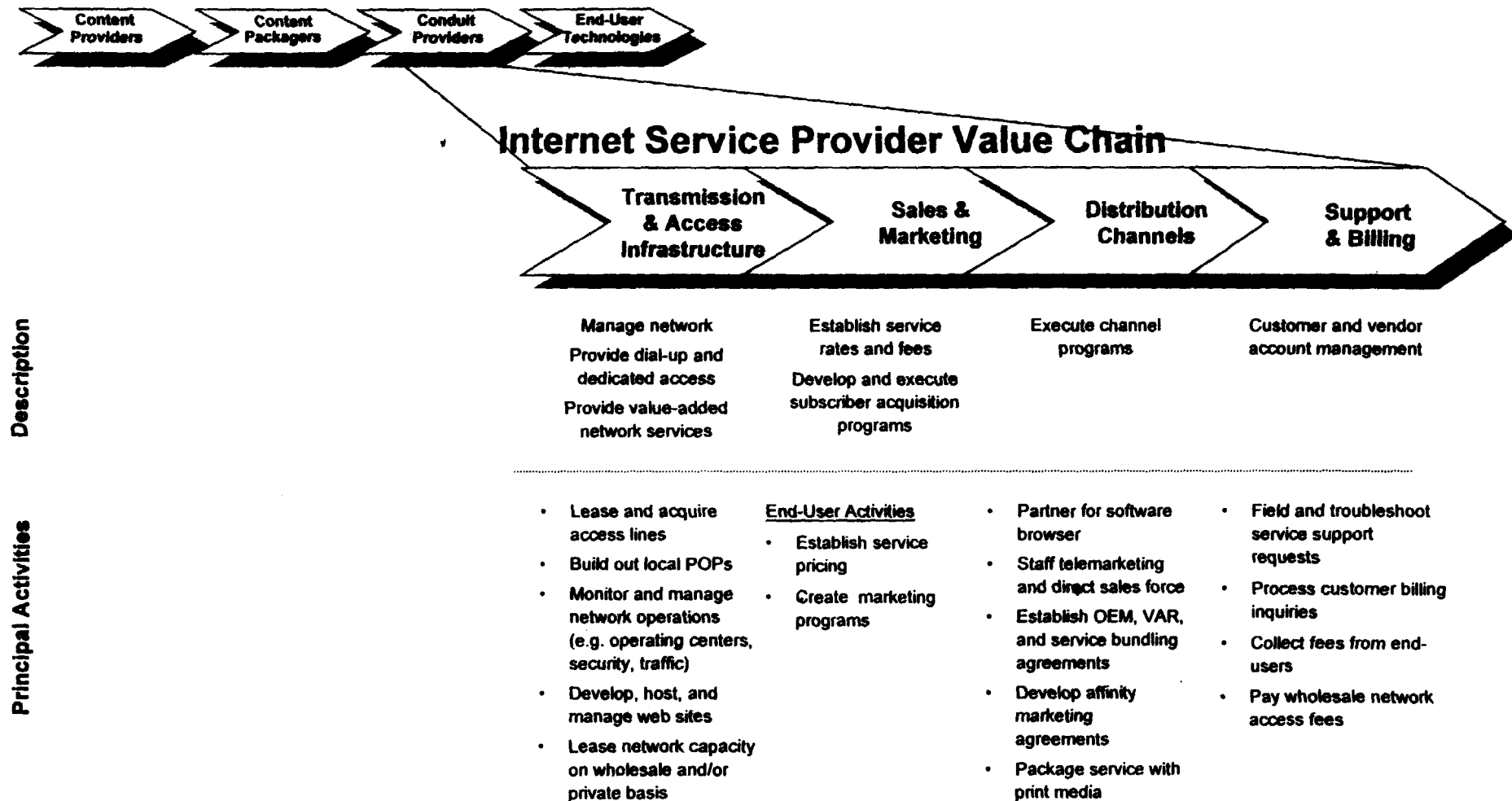
Media Industry Supply Chain



Online service providers create value by delivering customers access to proprietary and originally produced content, packaged in context with the Web and interactive communities



ISPs create customer value by maximizing the effectiveness of their network infrastructure to deliver optimized access to and interaction with the Internet



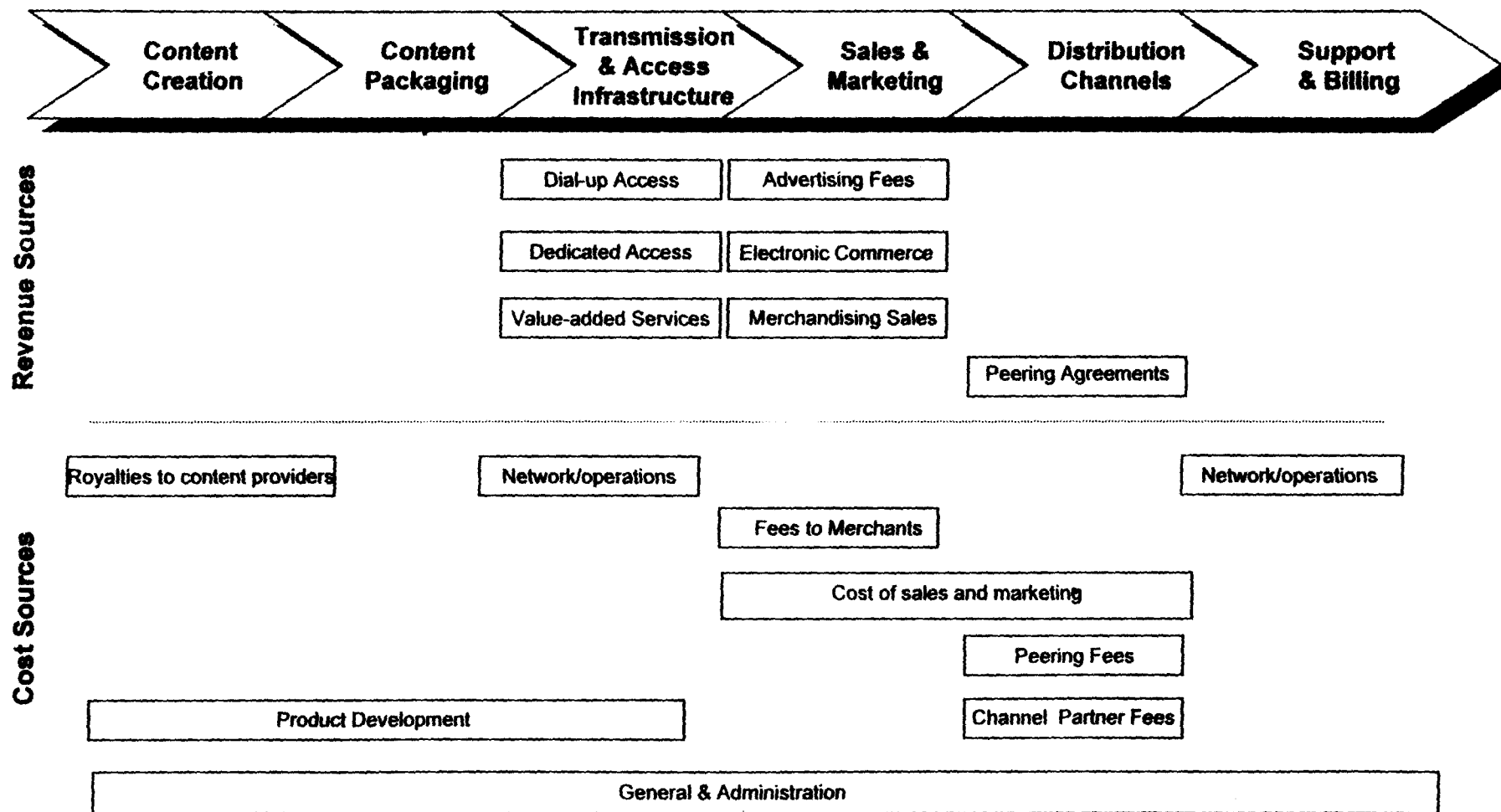
The online service and ISP value chains are converging around a common set of value drivers

Online Service and ISP Value Drivers

Sources of revenue	Drivers of revenue
Subscriptions (business and consumer standard and high-speed dial-up and dedicated access)	<ul style="list-style-type: none"> • # of monthly subscribers • Subscribers/access speed • Subscriber usage • Fee/subscriber
Electronic Commerce	<ul style="list-style-type: none"> • Commission fees per transaction • Flat merchant fees
Advertising	<ul style="list-style-type: none"> • Average fee/CPM • Revenue sharing mix
Value-added Network Services	
- Web site hosting	<ul style="list-style-type: none"> • Service fees • Usage of storage space • Access speed
- Web site design	<ul style="list-style-type: none"> • Service fees • Number of Web pages developed • Complexity of Web pages developed
- Security Services	<ul style="list-style-type: none"> • Service fees
- Private Network Management (LAN/WAN)	<ul style="list-style-type: none"> • Service fees • Usage fees • Access speed
Wholesale Services	<ul style="list-style-type: none"> • Transmission fees • Traffic volume

Sources of cost	Drivers of cost
Cost of Revenues	
Network/operations-related items	
- data network	<ul style="list-style-type: none"> • Size of subscriber base • Average usage/subscriber • Scale of operations • Host computers & network equipment
- data centers	<ul style="list-style-type: none"> • Size of subscriber base • Personnel/staffing levels • Size of telephone banks/call centers
- customer support	<ul style="list-style-type: none"> • Peering fees - usage and traffic • Fees to channel partners
Distribution	<ul style="list-style-type: none"> • Size of subscriber base • Service usage • Number of content partners
Royalties to content providers	<ul style="list-style-type: none"> • Fees to merchants based on usage and transactions
Merchandising	<ul style="list-style-type: none"> • R&D • Technical personnel • Content/software production
Product Development	<ul style="list-style-type: none"> • Sales organization - Customer acquisition/retention - Advertising/Promotions
Sales & Marketing	<ul style="list-style-type: none"> • Office-related expenses • Personnel-related expenses
General & Administration	

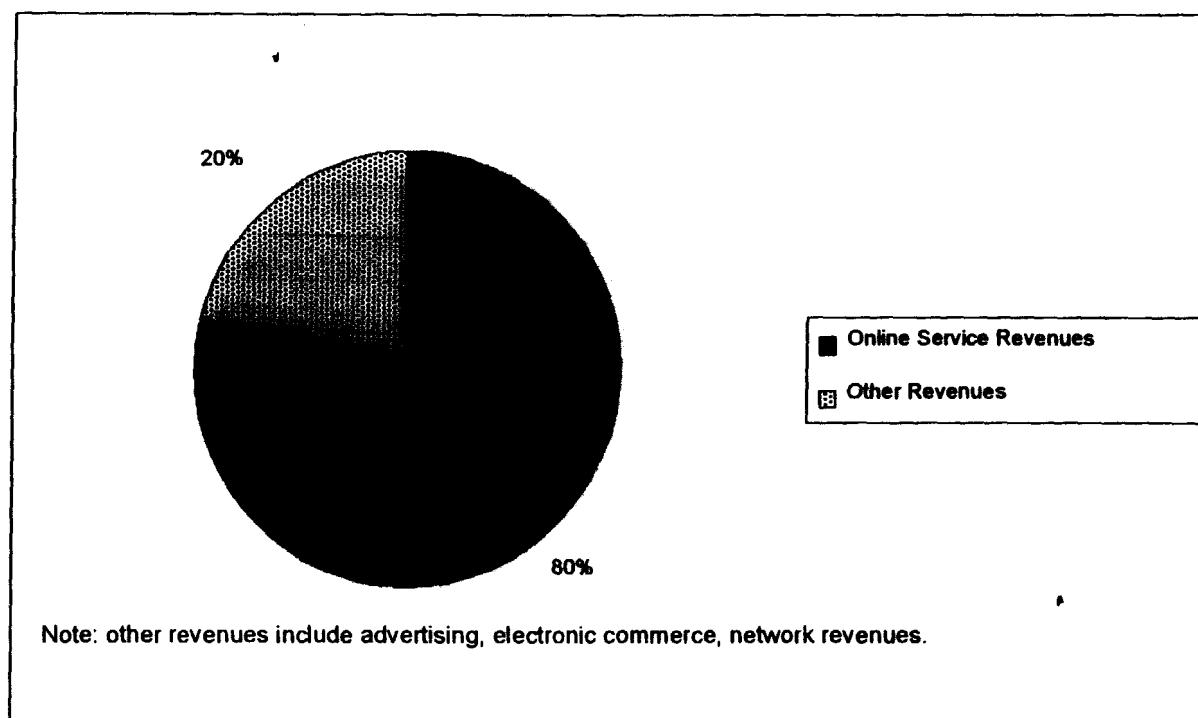
Currently, access-related subscription revenues contribute the largest share of provider income, while electronic commerce and value added services are targeted for long term sustainable growth



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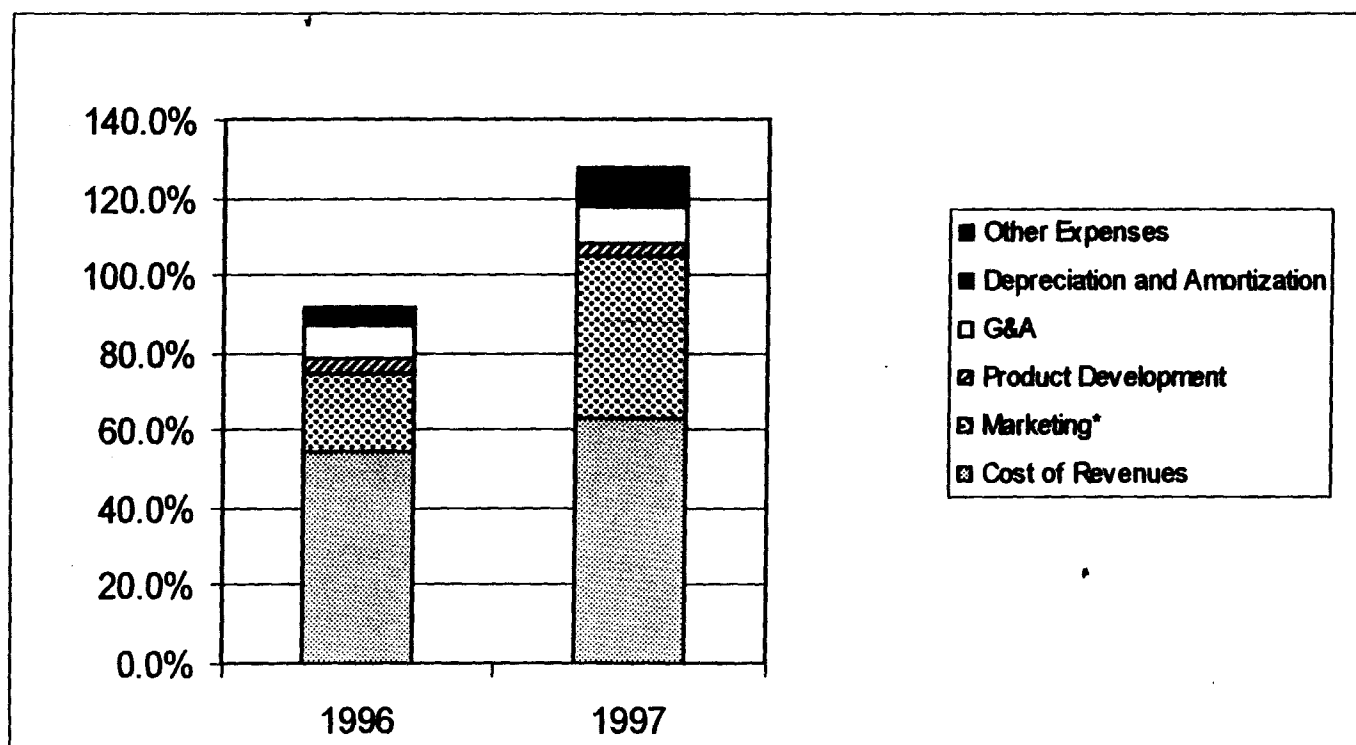
Financial model -- online service providers

- % of Total Revenues -



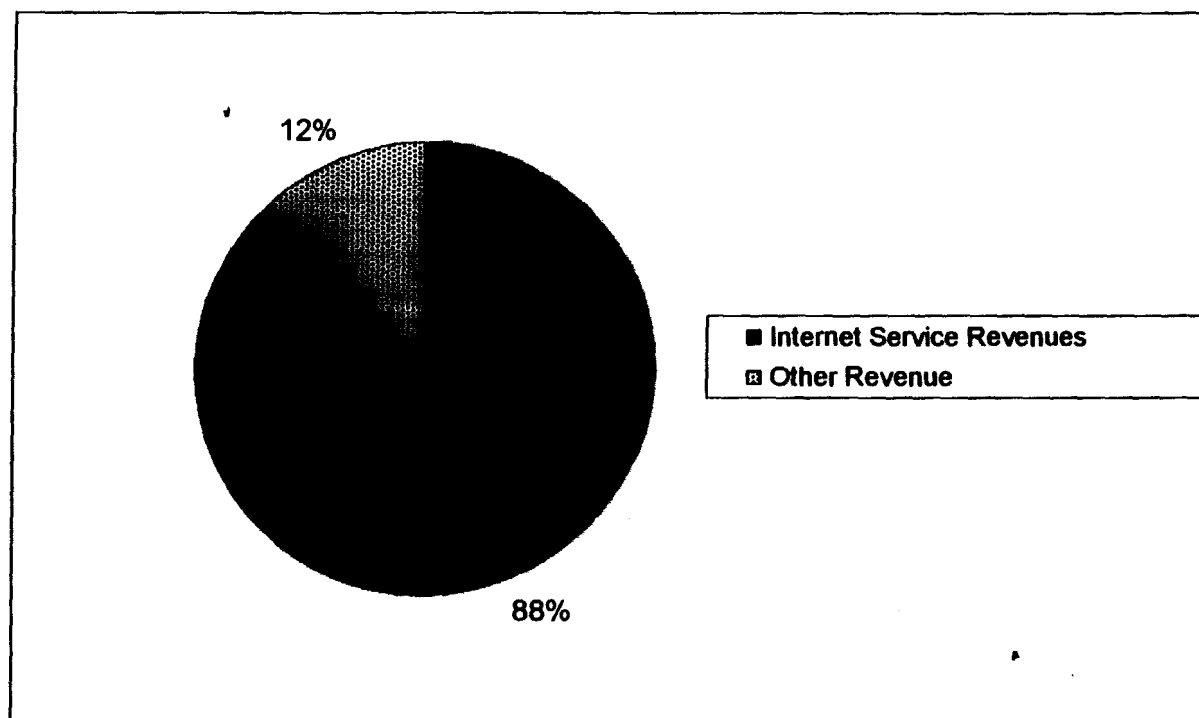
Financial model -- online service providers (cont'd)

- Oper Exp as % of Total Revenues -



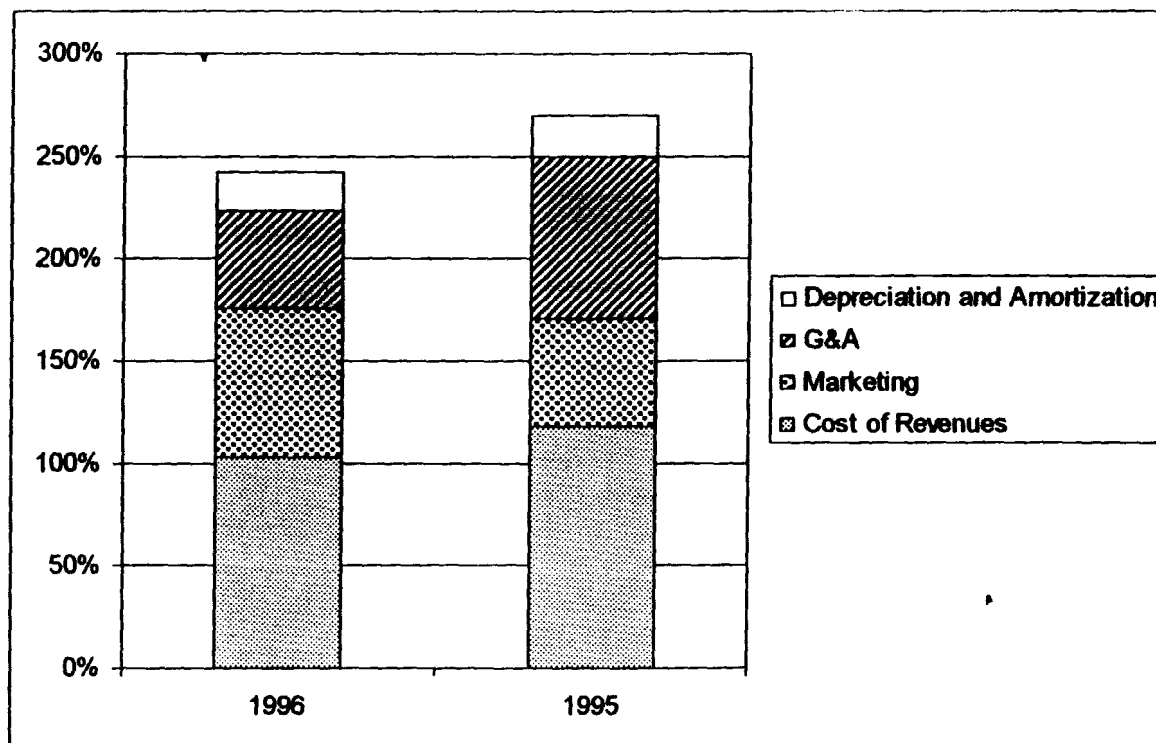
Financial model -- business-to-business ISPs

- % of Total Revenues -



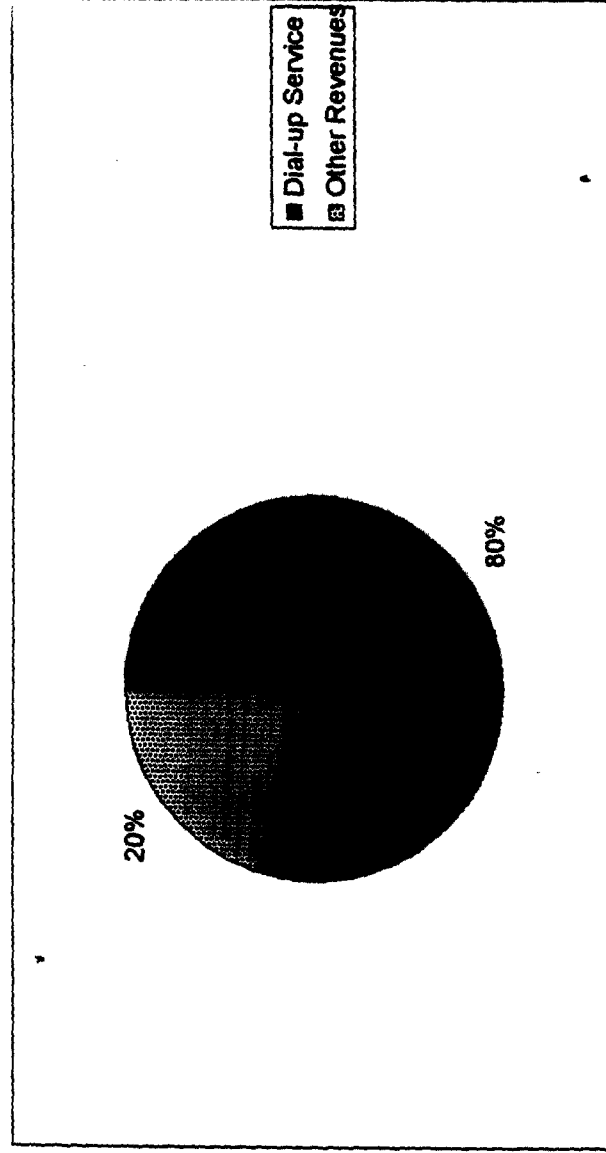
Financial model -- business-to-business ISPs (cont'd)

- Oper Exp as % of Total Revenues -



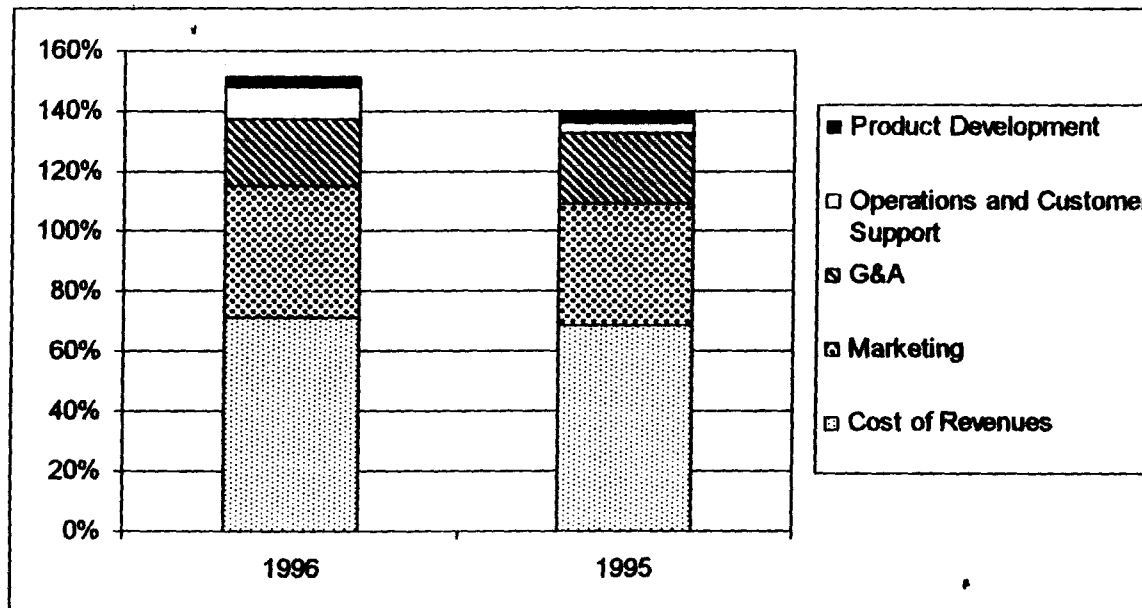
Financial model -- consumer ISPs

- % of Total Revenues -



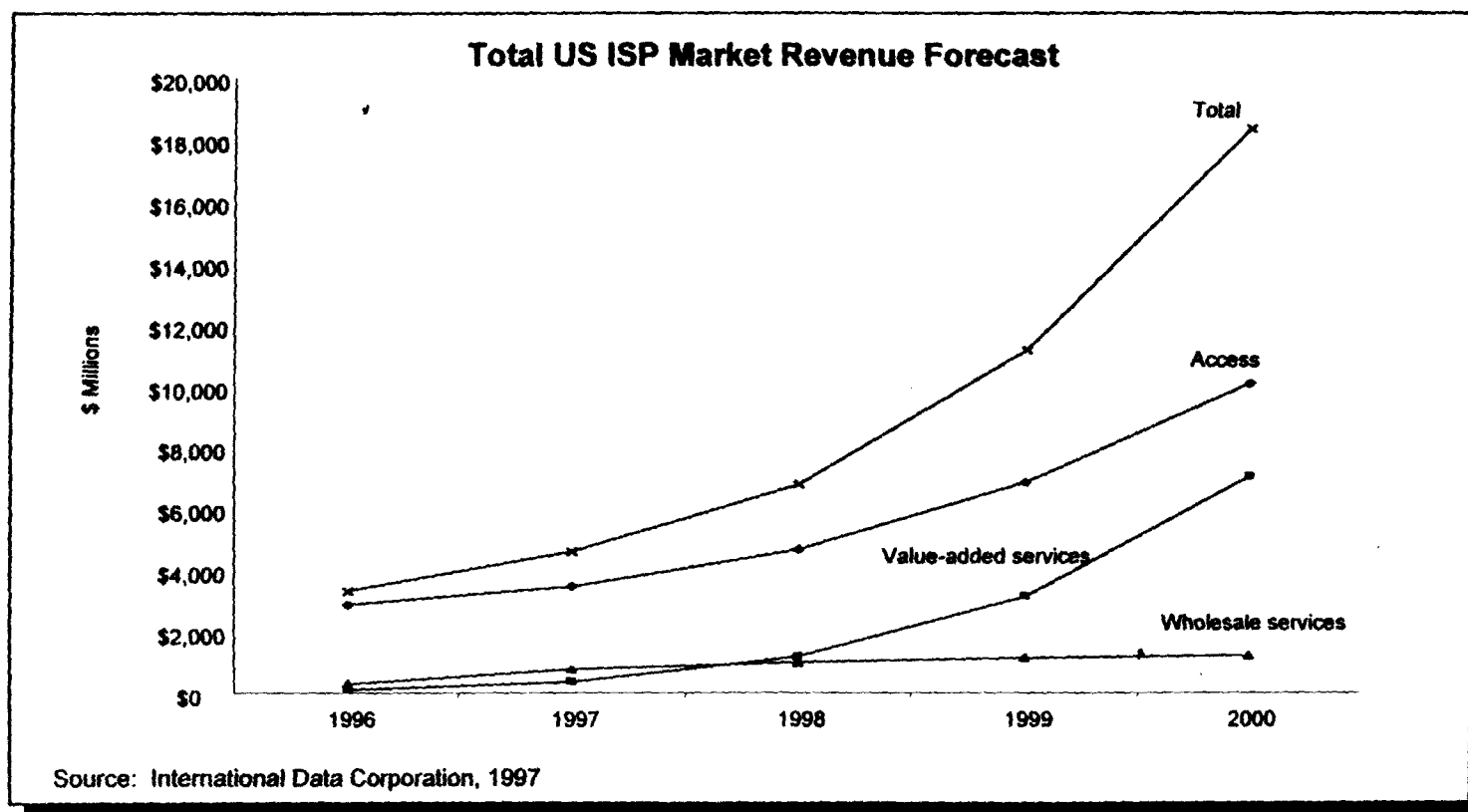
Financial model -- consumer ISPs (cont'd)

- Oper Exp as % of Total Revenues -



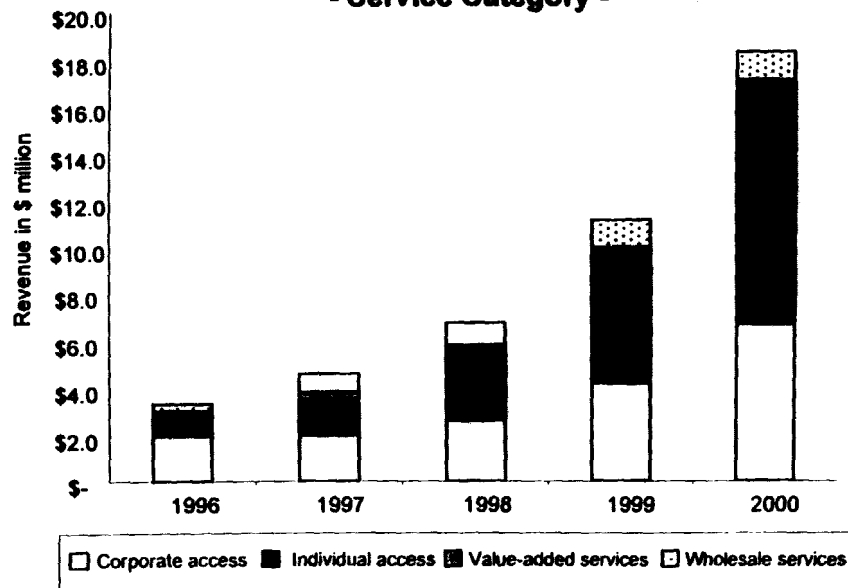
Market trends

The market opportunity for ISP access, value-added services, and the resale of managed IP capacity is forecasted to reach \$18 billion by 2000

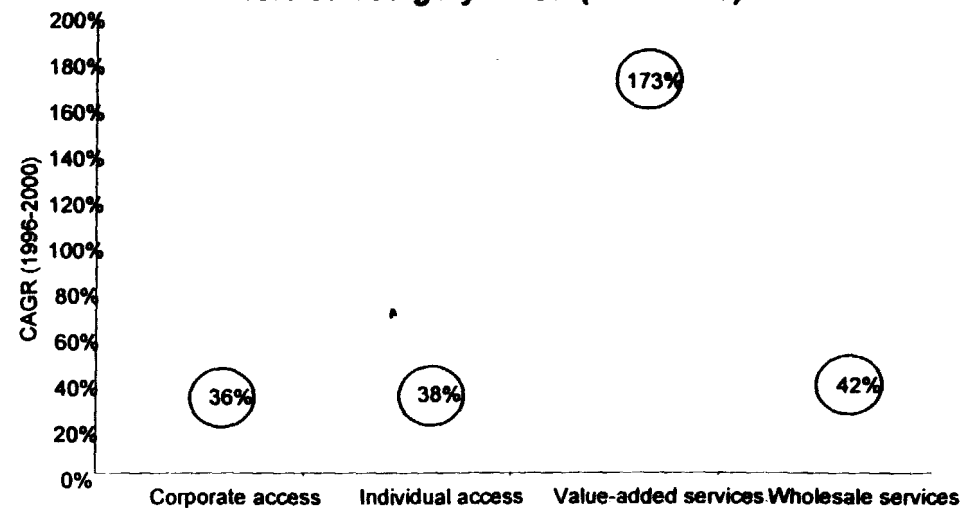


Value added services will experience the highest rate of growth, however corporate and individual access will constitute the largest share of total market revenues

**Total US ISP Market Revenue Forecast
- Service Category -**



**Total US ISP Market Revenue Forecast
- Service Category CAGR (1996-2000) -**



Source: International Data Corporation, 1997

Jeff Pulver

I'm the president of pulver.com, Inc., which was founded in 1994 and is an Internet based consulting firm. Pulver.com publishes Internet Technology related research such as The Pulver Report, produces trades shows and conferences and provides consulting services to the telecommunications, financial services and Radio/TV industry.

I'm also the Chairman of the Voice on the Net (VON) Coalition, and one of the pioneers in the Internet Telephony Industry. In December 1997 I was named one of the top 10 people to watch by Telephony Magazine and I was named one of the "Microtimes 100" in the January 1, 1998 issue of the magazine.

I've been a columnist for both Boardwatch and Internetworld. Please e-mail all technology news to: technews@pulver.com.

My first book, Internet Telephone Toolkit, was published in 1996 by John Wiley & Sons is available in bookstores worldwide, and can be ordered online as well.

Amongst everything else going on, my current interests include: Internet enabling technologies including VON , spreadsheets, fixed-income securities, ham radio (I'm WA2BOT), , the MBone, US Copyright Law and wireless communication devices.

I am also the president/founder of Spreadsheet Solutions Corp. a firm which publishes financial add-in products for Lotus 1-2-3 and Excel, including: FINCalc, @EASE and @Fixed-Income.

The Internet Telephony Industry

Jeff Pulver

President - pulver.com

February 19, 1998

My 15 Minute Mission:

"To provide a brief technical explanation of Internet telephony and how it works. I will briefly analyze the industry, discussing market issues, trends and connectivity predictions. Will provide insight into the question of if and when Internet telephony might take business away from ILECs."